ABSTRACT

An interactive, software-based treatment planning method to correct a malocclusion is described. The method can be performed on an orthodontic workstation in a clinic or at a remote location such as a lab or precision appliance manufacturing center. The workstation stores a virtual three-dimensional model of the dentition of a patient and patient records. The virtual model is manipulated by the user to define a target situation for the patient, including a target archform and individual tooth positions in the archform. Parameters for an orthodontic appliance, such as the location of orthodontic brackets and resulting shape of an orthodontic archwire, are obtained from the simulation of tooth movement to the target situation and the placement position of virtual brackets. The treatment planning can also be executed remotely by a precision appliance service center having access to the virtual model of the dentition. In the latter situation, the proposed treatment plan is sent to the clinic for review, and modification or approval by the orthodontist. The method is suitable for other orthodontic appliance systems, including removable appliances such as transparent aligning trays.